

PERSONAL INFORMATION

Name: Mohammad Ahmad Qasim Al-Shabi
Date of Birth: February, 15th, 1980
Nationality: Jordanian
Address: Sharjah, UAE
Mobile No.: +971 563650290
Email: maqas2002@yahoo.com
Currently: - Associate Professor - Mechanical Engineering – University of Sharjah.
 - IEEE Senior.
 - Member of Jordan Engineers Association (since 2002).
 - Member of the Jordanian Robotic Association (since 2014).
 - Member of IEEE/Robotic Section (since 2014).
 - Member of ASME (since 2014).



EDUCATION AND QUALIFICATION

PhD in Mechanical Engineering/Mechatronics (4/4: Excellent) from McMaster University/ Canada, 2011, **Thesis title:** The General Toeplitz/Observability Smooth Variable Structure Filter.
MSc in Mechanical Engineering/General Mechanics (86.9: Excellent) from Jordan University of Science and Technology/ Jordan, 2005, **Thesis title (Mechatronics):** Text Detection and Character Recognition Using Fuzzy Image Processing.
BSc in Mechanical Engineering/Mechatronics (83.4: Very Good) from Jordan University of Science and Technology/ Jordan, 2002, **Project title:** Design an automated gate operated by Image Processing Techniques.

SKILLS

	Beginner	Intermediate	Advance	Professional
Programming Languages and Technologies				
C, C++ // Data Structure				
Visual Basic // Labview				
MatLab // AutoCAD // Mechanical Desktop				
Ability to learn other programming language				
Technical Skills				
Computer Assembling				
Microcontroller // PLC's				
Numerical Techniques.				

LANGUAGES

- **Arabic (mother tongue)**
 - o **Read, Write and Conversation:** Excellent.
- **English (Studying/Teaching Language)**
 - o **Read, Write and Conversation:** Very Good.

EXPERIENCE

Job Title	Institution	Country	Description	Date
Assistant Professor	University of Sharjah – Mechanical Department	UAE	Teaching courses and supervising projects.	2015-NOW
Chairman	Philadelphia University – Mechatronics Department	Jordan	Head of the department.	2014-2015
Assistant Professor	Philadelphia University – Mechatronics Department	Jordan	Teaching courses and supervising projects.	2011-2015
Assistant Professor/ Part time	Jordan University for Science and Technology & German Jordanian University	Jordan	Teaching courses and supervising projects.	2011-2015
Exams Presider	McMaster University	Canada	Organizing the exams for the university colleges, manage the exam room, and supervise the students.	2007-2011
Teacher Assistant	McMaster University – Mechanical Department	Canada	Helping professors in their courses; marking the exams and the assignments.	2007-2010
Lab Supervisor	Philadelphia University – Mechanical Department	Jordan	Supervising the Fluid Mechanics lab. Teaching the material, supervising the experiments, and marking the exams and the assignments.	2004-2006
Supervisor	Bosch	Jordan	Repairing cars and vehicles.	2003-2004
Teacher Assistant	Jordan University for Science and Technology	Jordan	Helping professors in their courses; marking the exams and the assignments.	2002-2005
Trainer	Jordan University for Science and Technology	Jordan	Maintenance Department.	2001

EXPERIENCE IN TEACHING / COURSES

I have been the instructor (TA/Supervisor/Lecturer) for the following courses:

Job Title	Institution /Location	Course/Project
Academic Staff Member (Assistant Professor)	University of Sharjah/ UAE	(Undergraduate Courses) Measurement and Instrumentation, Machine Element and Design, Mechanical System Design, Analytical Methods in Eng., Engineering Graphic Drawing, Robotics and Automation, and Manufacturing Processes.
	Philadelphia University/ Jordan	(Graduate Courses) Industrial Robotics and Mechatronics Systems, and Advance Modeling for Mechatronics Systems
		(Undergraduate Courses) Modeling, Simulation and Interface, Automatic Control, Digital Control, Process Control, Strength of Material, Mechanics of Engineering Materials, Engineering Materials and Manufacturing Technology, Machine/Mechanical Design 1 + 2, Dynamics, Mechanical Vibration, Dynamics and Vibration, Theory of Machine, Robotics and Automation, Statics, Mechanical Drawing, Engineering workshop, Engineering Training, and Thermo-Fluids.
	Jordan University for Science and Technology /Jordan	(Undergraduate Courses) Automatic Control, Mechanical Design II, Engineering Drawing, Thermodynamics I+II, Special Topics in Thermal Powers – Modeling, Numerical Methods, and Design of Thermal Systems.
	German Jordanian University /Jordan	(Undergraduate Courses) Intelligent Machine, and Linear Systems.
Supervisor	Philadelphia University/ Jordan	(Undergraduate Courses) Fluid Mechanics Lab, and Engineering Drawing.
Teacher Assistant	McMaster University/ Canada	Mechanical Design I and II, Mechanical Drawing, Automatic Control, Mechanical Vibration, Strength of Material
	Jordan University for Science and Technology /Jordan	Mechanical Design I and II, Mechanical Drawing, Fluid Mechanics, Engineering Drawing, Automatic Control, Strength of Material, Dynamics, Digital Image Processing, Instrumentation and Vibration Lab, Strength of Material Lab, Industrial Management, Quality Assurance, Fuzzy Logic, Automation, and Thermodynamics 1+2.

AWARDS/GRANTS

- University of Sharjah grant to develop a hybrid drone 2019-2020.
- University of Sharjah grant to develop a medical drone 2019-2020.
- University of Sharjah grant to develop a Hybrid UG-AV 2019-2020.
- University of Sharjah grant to develop a medical plane 2019-2020.
- University of Sharjah grant to develop a Piezoelectric wind turbine 2018-2019.
- University of Sharjah grant to develop an UUWV for gas inspection purposes 2018-2019.
- University of Sharjah grant to develop a Hybrid UG-AV for transportation purposes 2018-2019.
- University of Sharjah grant to develop an UAV to inspect the health of a nuclear reactor 2018-2019.
- University of Sharjah grant to develop a Piezoelectric Harvesting Mat 2017-2018.
- University of Sharjah grant to develop an UUWV for surveillance purposes 2017-2018.
- University of Sharjah grant to develop an UGV for surveillance purposes 2016-2017.
- University of Sharjah grant to develop an UAV for surveillance purposes 2016-2017.
- University of Sharjah grant to develop an UAV powered by a battery and a solar energy 2015-2016.
- University of Sharjah grant to develop a firefighter UAV 2015-2016.
- Seed Grant to develop Unmanned Air Vehicle (Quad/Hexa-copter) for civilian succor purposes.
- Targeted Research Grant in title "Biodynamic responses of the seated and standing human body to vibration in the x-y plane" 2016-2020.
- University of Sharjah Grant to develop GNSS CubeSat 2016-2020.
- Second Place in the National Technology Parade, Jordan (2015).
- Philadelphia grants to develop a UGV for special purposes 2014-2015.
- Philadelphia grants to develop a Tripod – Robot for special purposes 2014-2015.
- Philadelphia grants to develop a submarine for special purposes 2014-2015.
- Philadelphia grants to study the effect of vibrations on a human body 2014-2015.
- KADDB grants to develop UAVs for special purposes 2012-2014.
- Philadelphia grants to develop a UGV for heavy duty 2011.
- Full graduate scholarship for Doctoral Study in Science and Engineering – McMaster University – One year 2011.
- Clifton W. Sherman Graduate Scholarships for Doctoral Study in Science and Engineering – McMaster University – Two years 2008-2010.
- A full scholarship offered by Philadelphia University/Jordan to obtain the PhD degree from McMaster University/Canada. Three years 2006-2009.
- A partial scholarship offered by Jordan University for Science and Technology (JUST)/Jordan to obtain the Master degree. Two years 2002-2004.
- Obtained the BSc degree from JUST with being the third in the class (among 95 students). Name was placed on the Academic Honorary board for several semesters. (1998-2002).
- A full scholarship offered by Jordan University of Science and Technology/Jordan (JUST) for a year. 1998.

SERVICES ACTIVITY

- Member of social activity committee in College of Engineering (2019-2020).
- Coordinator for the internship at Mechanical and Nuclear Engineering Department (2018-2020).
- Member of research committee in Mechanical and Nuclear Engineering Department (2019-2020).
- Vice Chair, Mechanical Engineering Program in Mechanical and Nuclear Engineering Department (2018-2019).
- Advisor for the ME club (2017-2018).
- Member of the department and college councils/University of Sharjah (2015-Present).
- Member of ad-hoc committee that developed the initial accreditation report for the master's degree in aerospace engineering (MSAE)/University of Sharjah (2015-2019).
- Member of ad-hoc committee that developed the initial accreditation report for the PhD degree in Mechanical Engineering/University of Sharjah (2019-2021).
- Member of ad-hoc committee that developed the initial accreditation report for the master's degree in mechanical engineering (MSME)/University of Sharjah (2018-2021).
- Member of the ME ABET ad-hoc accreditation committee (2015-2016).
- Member of the Midterm Exam, research and graduate studies, and Faculty Selection committees /University of Sharjah (2015-Present).
- Member of a committee that updates the lab's equipment (2015-2016).
- Member (judge) of several national and international competitions (2013-2016), e.g. National Technology Parades 2014 and 2015.
- Chairperson of Mechatronics Engineering Department/Philadelphia University (2014-2015).
- Member of the department and college councils/Philadelphia University (2011-2015).
- Member of an ad-hoc committee that developed master degree in Mechatronics Engineering/Philadelphia University (2011-2015).
- Member of a committee that edited the program curriculum/Philadelphia University (2011-2015).
- Member of the departmental Quality Assurance/Philadelphia University (2011-2015).
- Coordinator of the training committee for the College of Engineering/Philadelphia University (2011-2015).
- Member of the Technical Program and/or Reviewer Committees of several conferences; e.g. AEECT, ISMA, ICPER, GSCIT, ENCINS, ICCAAD, SSD, GCC, ICCAT, ICCVIA, CoCoNet, ICMAPH, IEACon, ICEECC, UAEGSRC, and ICA.
- Reviewer for different Journals; e.g. ASME - Journal of Dynamic Systems, Measurement and Control, Automatica, IEEE, and Neural Network World Journal with a total of more than sixty reviewed papers.
- External Examiner: MSc thesis for students at the Jordan University of Science & Technology 2012, 2013 and 2014.

BOOKS & PUBLICATIONS

Book I: Mohammad Al-Shabi, **The General Toeplitz/Observability Smooth Variable Structure Filter: Fault Detection and Parameter Estimation**, LAP LAMBERT Academic Publishing, 2012, ISBN-10: 3659002585, ISBN-13: 978-3659002588.

Book II: Chapter in **Design and Performance Optimization of Renewable Energy Systems**, Editors: Mamdouh Assad & Marc Rosen, ISBN: 9780128216026, Academic Press.

Selected Researches

- 1) Ahmadi, A., El Haj Assad, M., Jamali, D.H., Kumar, R., Li, Z.X., Salameh, T., **Al-Shabi, M.**, Ehyaei, M.A. Applications of geothermal organic Rankine Cycle for electricity production. (2020) Journal of Cleaner Production, 274, art. no. 122950, DOI: 10.1016/j.jclepro.2020.122950
- 2) Avzayesh, M., Abdel-Hafez, M.F., Al-Masri, W.M.F., **Al-Shabi, M.**, El-Hag, A.H. A Hybrid Estimation-Based Technique for Partial Discharge Localization. (2020) IEEE Transactions on Instrumentation and Measurement, 69 (11), art. no. 9104966, pp. 8744-8753. DOI: 10.1109/TIM.2020.2999165
- 3) Spotts, I., Brodie, C.H., Gadsden, S.A., **Al-Shabi, M.**, Collie, C.M. Comparison of nonlinear filtering techniques for photonic systems with blackbody radiation. (2020) Applied Optics, 59 (30), pp. 9303-9312. DOI: 10.1364/AO.403484
- 4) Andrew Gadsden, S., **Al-Shabi, M.** A study of variable structure and sliding mode filters for robust estimation of mechatronic systems. (2020) IEMTRONICS 2020 - International IOT, Electronics and Mechatronics Conference, Proceedings, art. no. 9216381. DOI: 10.1109/IEMTRONICS51293.2020.9216381
- 5) Lee, A.S., Andrew Gadsden, S., **Al-Shabi, M.** Application of nonlinear estimation strategies on a magnetorheological suspension system with skyhook control. (2020) IEMTRONICS 2020 - International IOT, Electronics and Mechatronics Conference, Proceedings, art. no. 9216390. DOI: 10.1109/IEMTRONICS51293.2020.9216390
- 6) Azizur Rahman, S., Al-Yateem, N., Al-Marzouqi, A., Iqbal Ahamed, S., **Al-Shabi, M.** Mobile for Health: A Digital Intervention to Reduce Smoking in the United Arab Emirates. (2020) Proceedings - 2020 IEEE 44th Annual Computers, Software, and Applications Conference, COMPSAC 2020, art. no. 9202614, pp. 741-745. DOI: 10.1109/COMPSAC48688.2020.0-171
- 7) Al-Yateem, N., Azizur Rahman, S., Al-Marzouqi, A., Iqbal Ahamed, S., **Al-Shabi, M.** EmCARE Applications in Managing the Emotional Skills of Children and Adolescents in the United Arab Emirates. (2020) Proceedings - 2020 IEEE 44th Annual Computers, Software, and Applications Conference, COMPSAC 2020, art. no. 9202731, pp. 1434-1437. DOI: 10.1109/COMPSAC48688.2020.00-54
- 8) Al-Marzouqi, A., Al-Yateem, N., Azizur Rahman, S., Iqbal Ahamed, S., **Al-Shabi, M.** Mobile Technology to Improve Physical Activity among School-Aged Children in the United Arab Emirates. (2020) Proceedings - 2020 IEEE 44th Annual Computers, Software, and Applications Conference, COMPSAC 2020, art. no. 9202735, pp. 1086-1088. DOI: 10.1109/COMPSAC48688.2020.0-127
- 9) Abido, L.K., Bani-Hani, E., El Haj Assad, M., **Al-Shabi, M.**, Soudan, B., Oriaje, A.T. Effects of environmental and turbine parameters on energy gains from wind farm system: Artificial neural network simulations. (2020) Wind Engineering, 44 (2), pp. 181-195. DOI: 10.1177/0309524X19849834
- 10) **Al-Shabi, M.**, Elnady, A. Recursive Smooth Variable Structure Filter for Estimation Processes in Direct Power Control Scheme under Balanced and Unbalanced Power Grid. (2020) IEEE Systems Journal, 14 (1), art. no. 8782044, pp. 971-982. DOI: 10.1109/JSYST.2019.2919792
- 11) Elnady, A., **Al-Shabi, M.**, Adam, A.A. Novel Filters Based Operational Scheme for Five-Level Diode-Clamped Inverters in Microgrid. (2020) Frontiers in Energy Research, 8, art. no. 11. DOI: 10.3389/fenrg.2020.00011
- 12) Haj Assad, M.E., **Al-Shabi, M.**, Khaled, F. Reverse osmosis with an energy recovery device for seawater desalination powered by Geothermal energy. (2020) 2020 Advances in Science and Engineering Technology International Conferences, ASET 2020, art. no. 9118247. DOI: 10.1109/ASET48392.2020.9118247

- 13) **Al-Shabi, M.**, Ghenai, C., Bettayeb, M. Modified asymmetric time-varying coefficient of particle swarm optimization. (2020) 2020 Advances in Science and Engineering Technology International Conferences, ASET 2020, art. no. 9118366. DOI: 10.1109/ASET48392.2020.9118366
- 14) Assad, M.E.-H., **Al-Shabi, M.**, Khosravi, A., Hamida, A., Said, Z. Energy and economic analysis of flash steam geothermal power plants in Lebanon. (2020) 2020 Advances in Science and Engineering Technology International Conferences, ASET 2020, art. no. 9118255. DOI: 10.1109/ASET48392.2020.9118255
- 15) Andrew Gadsden, S., **Al-Shabi, M.** The Sliding Innovation Filter. (2020) IEEE Access, 8, art. no. 9096294, pp. 96129-96138. DOI: 10.1109/ACCESS.2020.2995345
- 16) **Al-Shabi, M.**, Nawayseh, N., Bettayeb, M. Hybrid artificial genetic – neural network model to predict the transmission of vibration to the head during whole-body vibration training. (2020) Journal of Vibroengineering, 22 (3), pp. 705-720. DOI: 10.21595/jve.2019.20828
- 17) Khuwaileh, B.A., Al-Hamadi, F.I., **Al-Shabi, M.A.**, Metwally, W.A. Inverse depletion of used nuclear fuel: A Bayesian approach. (2020) Transactions of the American Nuclear Society, 122, pp. 68-70. DOI: 10.13182/T122-32205
- 18) Khuwaileh, B.A., Ishag, A., **Al-Shabi, M.A.**, El Haj Assad, M. Desalination as an energy storage alternative for nuclear power plants: Barakah power plant as a case study. (2020) Proceedings of SPIE - The International Society for Optical Engineering, 11387, art. no. 1138714. DOI: 10.1117/12.2566114
- 19) El Haj Assad, M., **Al-Shabi, M.**, Sahlolbei, A., Khuwaileh, B. Analysis of hybrid geo-solar power plant. (2020) Proceedings of SPIE - The International Society for Optical Engineering, 11387, art. no. 1138715. DOI: 10.1117/12.2566216
- 20) Farih, R., **Al-Shabi, M.**, Bettayeb, M., Ghommam, J. Robust Active Disturbance Rejection Control for Flexible Link Manipulator. (2020) Robotica, 38 (1), pp. 118-135. DOI: 10.1017/S026357471900050X
- 21) Ballous, K.A., Khalifa, A.N., Abdulwadood, A., **Al-Shabi, M.**, El Haj Assad, M. Medical kit: Emergency drone. (2020) Proceedings of SPIE - The International Society for Optical Engineering, 11425, art. no. 114250V. DOI: 10.1117/12.2566115
- 22) **Al-Shabi, M.**, Ghenai, C., Bettayeb, M., Ahmad, F.F., El Haj Assad, M. Multi-group grey wolf optimizer (MG-GWO) for estimating photovoltaic solar cell model. (2020) Journal of Thermal Analysis and Calorimetry. DOI: 10.1007/s10973-020-09895-2
- 23) El Haj Assad, M., **Al-Shabi, M.**, Sahlolbei, A., Hmida, A., Khuwaileh, B. Geothermal energy use in seawater desalination. (2020) Proceedings of SPIE - The International Society for Optical Engineering, 11387, art. no. 1138716. DOI: 10.1117/12.2566527
- 24) Riyadh, A.M., Elshoubaky, A.M., Rihani, J.A., **Al-Shabi, M.A.**, Metwally, W.A., Khuwaileh, B.A. A drone-based automated radiation surveillance system. (2020) Transactions of the American Nuclear Society, 122, pp. 795-797. DOI: 10.13182/T122-32575
- 25) Ghassan, H., Omar, M., Soliman, K., Alhouti, I., **Al-Shabi, M.**, El Haj Assad, M. Hybrid drone powered by combined gasoline and electric motors. (2020) Proceedings of SPIE - The International Society for Optical Engineering, 11425, art. no. 114250W. DOI: 10.1117/12.2566117
- 26) **Al-Shabi, M.**, Hatamleh, K.S., Gadsden, S.A., Soudan, B., Elnady, A. Robust nonlinear control and estimation of a PRRR robot system. (2019) International Journal of Robotics and Automation, 34 (6), pp. 632-644. DOI: 10.2316/J.2019.206-0160
- 27) Elnady, A., **Al-Shabi, M.**, Adam, A.A. New combination of super-twisting and Kalman filter for direct power control of distributed generation at different operations. (2019) International Journal of Electrical Power and Energy Systems, 109, pp. 618-640. DOI: 10.1016/j.ijepes.2019.01.014
- 28) Sinan, S., Elnady, A., **Al-Shabi, M.** Distributed Generator in Grid-Connected Mode Using Improved Exponential Sliding Mode Control. (2019) 2018 IEEE International Conference on Renewable Energy and Power Engineering, REPE 2018, art. no. 8657668, pp. 7-12. DOI: 10.1109/REPE.2018.8657668
- 29) Hammoudeh, A., Al-Sharif, L., **Al-Shabi, M.** A benchmark and real-time estimator for the passenger arrival rate to elevator system. (2019) Building Services Engineering Research and Technology, 40 (2), pp. 135-150. DOI: 10.1177/0143624418813434

- 30) Elnady, A., **Al-Shabi, M.** Operation of Parallel Inverters in Microgrid Using New Adaptive PI Controllers Based on Least Mean Fourth Technique. (2019) *Mathematical Problems in Engineering*, 2019, art. no. 4854803. DOI: 10.1155/2019/4854803
- 31) Faroukh, Y., Hany, A., **Al-Shabi, M.** Studying the effect of temperature on an electric-powered ducted fan using artificial neural networks. (2019) *Proceedings of SPIE - The International Society for Optical Engineering*, 10979, art. no. 109790L. DOI: 10.1117/12.2522985
- 32) Wilkerson, S.A., Gadsden, S.A., Cerreta, J., **Al-Shabi, M.** Drone-Based technologies used to assess modern farming practices in undergraduate research. (2019) *Proceedings of SPIE - The International Society for Optical Engineering*, 11008, art. no. 110080K. DOI: 10.1117/12.2519801
- 33) Faroukh, Y., Berrim, L., **Al-Shabi, M.**, Gadsden, S.A., Wilkerson, S.A. Studying the effect of current on an electric-powered ducted fan using artificial neural networks. (2019) *Proceedings of SPIE - The International Society for Optical Engineering*, 10979, art. no. 109790K. DOI: 10.1117/12.2522983
- 34) Khasawneh, Q.A., Jaradat, M.A.K., **Al-Shabi, M.**, Khalaf, H. Active control of a piezoelectric actuated four-bar mechanism deployed in robotics applications. (2018) *Intelligent Automation and Soft Computing*, 24 (2), pp. 443-457. DOI: 10.31209/2018.100000008
- 35) **Al-Shabi, M.**, Cataford, A., Gadsden, S.A. Quadrature Kalman filters with applications to robotic manipulators. (2018) *Proceedings - 2017 IEEE 5th International Symposium on Robotics and Intelligent Sensors, IRIS 2017*, 2018-January, pp. 117-124. DOI: 10.1109/IRIS.2017.8250108
- 36) Hill, E., Lee, A.S., Gadsden, S.A., **Al-Shabi, M.** Intelligent estimation strategies applied to a flight surface actuator. (2018) *Proceedings - 2017 IEEE 5th International Symposium on Robotics and Intelligent Sensors, IRIS 2017*, 2018-January, pp. 98-103. DOI: 10.1109/IRIS.2017.8250105
- 37) Elnady, A., **Al-Shabi, M.** Operation of Direct Power Control Scheme in Grid-Connected Mode Using Improved Sliding Mode Observer and Controller. (2018) *International Journal of Emerging Electric Power Systems*, 19 (5). DOI: 10.1515/ijee-2018-0041
- 38) Hatamleh, K.S., Khasawneh, Q.A., Al-Ghasem, A., Jaradat, M.A., Sawaqed, L., **Al-Shabi, M.** Scanning electron microscope fine tuning using four-bar piezoelectric actuated mechanism. (2018) *Journal of Electrical Engineering*, 69 (1), pp. 24-31. DOI: 10.1515/jee-2018-0003
- 39) **Al-Shabi, M.** Sigma-point Smooth Variable Structure Filters applications into robotic arm. (2017) *2017 7th International Conference on Modeling, Simulation, and Applied Optimization, ICMSAO 2017*, art. no. 7934865. DOI: 10.1109/ICMSAO.2017.7934865
- 40) Kajkouj, M., Shaer, S.A., Hatamleh, K., Salameh, I., **Al-Shabi, M.**, Gadsden, S.A., Lee, A. SURF and image processing techniques applied to an autonomous overhead crane. (2016) *24th Mediterranean Conference on Control and Automation, MED 2016*, art. no. 7535923, pp. 914-918. DOI: 10.1109/MED.2016.7535923
- 41) Baniyounis, M., **Al-Shabi, M.** PLC advanced course for postgraduate students. (2016) *ISMA 2015 - 10th International Symposium on Mechatronics and its Applications*, art. no. 7373455. DOI: 10.1109/ISMA.2015.7373455
- 42) Gadsden, S.A., **Al-Shabi, M.** A comparison of vibration control strategies for a flexible-link robot arm. (2016) *ISMA 2015 - 10th International Symposium on Mechatronics and its Applications*, art. no. 7373483. DOI: 10.1109/ISMA.2015.7373483
- 43) Sawaqed, L., **Al-Shabi, M.**, Alshaer, S., Salameh, I. An improved K-means clustering algorithm for two half-moon classification. (2016) *ISMA 2015 - 10th International Symposium on Mechatronics and its Applications*, art. no. 7373482. DOI: 10.1109/ISMA.2015.7373482
- 44) Hatamleh, K.S., Khasawneh, Q.A., Sawaqed, L., Hassan, M.M., Yafawi, S., **Al-Shabi, M.** Evolutionary low-cost visual shooting practice system. (2016) *ISMA 2015 - 10th International Symposium on Mechatronics and its Applications*, art. no. 7373484. DOI: 10.1109/ISMA.2015.7373484
- 45) **Al-Shabi, M.**, Hatamleh, K., Al Shaer, S., Salameh, I., Gadsden, S.A. A comprehensive comparison of sigma-point Kalman filters applied on a complex maneuvering road. (2016) *Proceedings of SPIE - The International Society for Optical Engineering*, 9842, art. no. 98421I. DOI: 10.1117/12.2224233

- 46) Hanlon, D., Lee, A., Wilkerson, S.A., **Al-Shabi, M.**, Gadsden, S.A. Implementing a dynamometer system on electric motors for unmanned systems. (2016) Proceedings of SPIE - The International Society for Optical Engineering, 9837, art. no. 98370X. DOI: 10.1117/12.2224197
- 47) **Al-Shabi, M.**, Bani-Yonis, M., Hatamleh, K.S. The sigma-point central difference smooth variable structure filter application into a robotic arm. (2015) 12th International Multi-Conference on Systems, Signals and Devices, SSD 2015, art. no. 7348201. DOI: 10.1109/SSD.2015.7348201
- 48) Hatamleh, K.S., **Al-Shabi, M.**, Al-Ghasem, A., Asad, A.A. Unmanned aerial vehicles parameter estimation using artificial neural networks and iterative Bi-section shooting method. (2015) Applied Soft Computing Journal, 36, pp. 457-467. DOI: 10.1016/j.asoc.2015.06.031
- 49) **Al-Shabi, M.**, Gadsden, S.A., Wilkerson, S.A. The cubature smooth variable structure filter estimation strategy applied to a quadrotor controller. (2015) Proceedings of SPIE - The International Society for Optical Engineering, 9474, art. no. 94741I. DOI: 10.1117/12.2181250
- 50) Gadsden, S.A., **Al-Shabi, M.**, Kirubarajan, T. Two-pass smoother based on the SVSF estimation strategy. (2015) Proceedings of SPIE - The International Society for Optical Engineering, 9474, art. no. 947409. DOI: 10.1117/12.2177256
- 51) Gadsden, S.A., **Al-Shabi, M.**, Kirubarajan, T. Square-root formulation of the SVSF with applications to nonlinear target tracking problems. (2015) Proceedings of SPIE - The International Society for Optical Engineering, 9474, art. no. 947408. DOI: 10.1117/12.2177226
- 52) **Al-Shabi, M.**, Hatamleh, K.S. The unscented smooth variable structure filter application into a robotic arm. (2014) ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE), 4B. DOI: 10.1115/IMECE2014-40118
- 53) Al-Shaer, S., **Al-Shabi, M.**, Younis, M.B. Applying image processing techniques on a ball collecting robot. (2014) 2014 4th International Conference on Digital Information and Communication Technology and Its Applications, DICTAP 2014, art. no. 6821704, pp. 321-326. DOI: 10.1109/DICTAP.2014.6821704
- 54) Younis, M.B., Alshaer, S., **Al-Shabi, M.** Applying Reverse Engineering and its techniques on a remote controlled toy helicopter. (2014) 2014 IEEE 11th International Multi-Conference on Systems, Signals and Devices, SSD 2014, art. no. 6808881. DOI: 10.1109/SSD.2014.6808881
- 55) Hatamleh, K.S., **Al-Shabi, M.**, Khasawneh, Q.A., Al-Asal, M.A. Application of SMC and NLFC into a PRRR robotic arm. (2014) ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE), 4A. DOI: 10.1115/IMECE2014-39136
- 56) Gadsden, S.A., **Al-Shabi, M.**, Arasaratnam, I., Habibi, S.R. Combined cubature Kalman and smooth variable structure filtering: A robust nonlinear estimation strategy. (2014) Signal Processing, 96 (PART B), pp. 290-299. DOI: 10.1016/j.sigpro.2013.08.015
- 57) **Al-Shabi, M.**, Habibi, S. New novel time-varying and robust smoothing boundary layer width for the smooth variable structure filter. (2013) 2013 9th International Symposium on Mechatronics and Its Applications, ISMA 2013, art. no. 6547375. DOI: 10.1109/ISMA.2013.6547375
- 58) **Al-Shabi, M.**, Gadsden, S.A., Habibi, S.R. Kalman filtering strategies utilizing the chattering effects of the smooth variable structure filter. (2013) Signal Processing, 93 (2), pp. 420-431. DOI: 10.1016/j.sigpro.2012.07.036
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